



# SPEC<sup>®</sup> CINT2006 Result

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## ACTION S.A.

SPECint<sup>®</sup>\_rate2006 = 319

ACTINA SOLAR 222 S6 (Intel Xeon E5-2609 v3, 1.90 GHz)

SPECint\_rate\_base2006 = 310

CPU2006 license: 9008

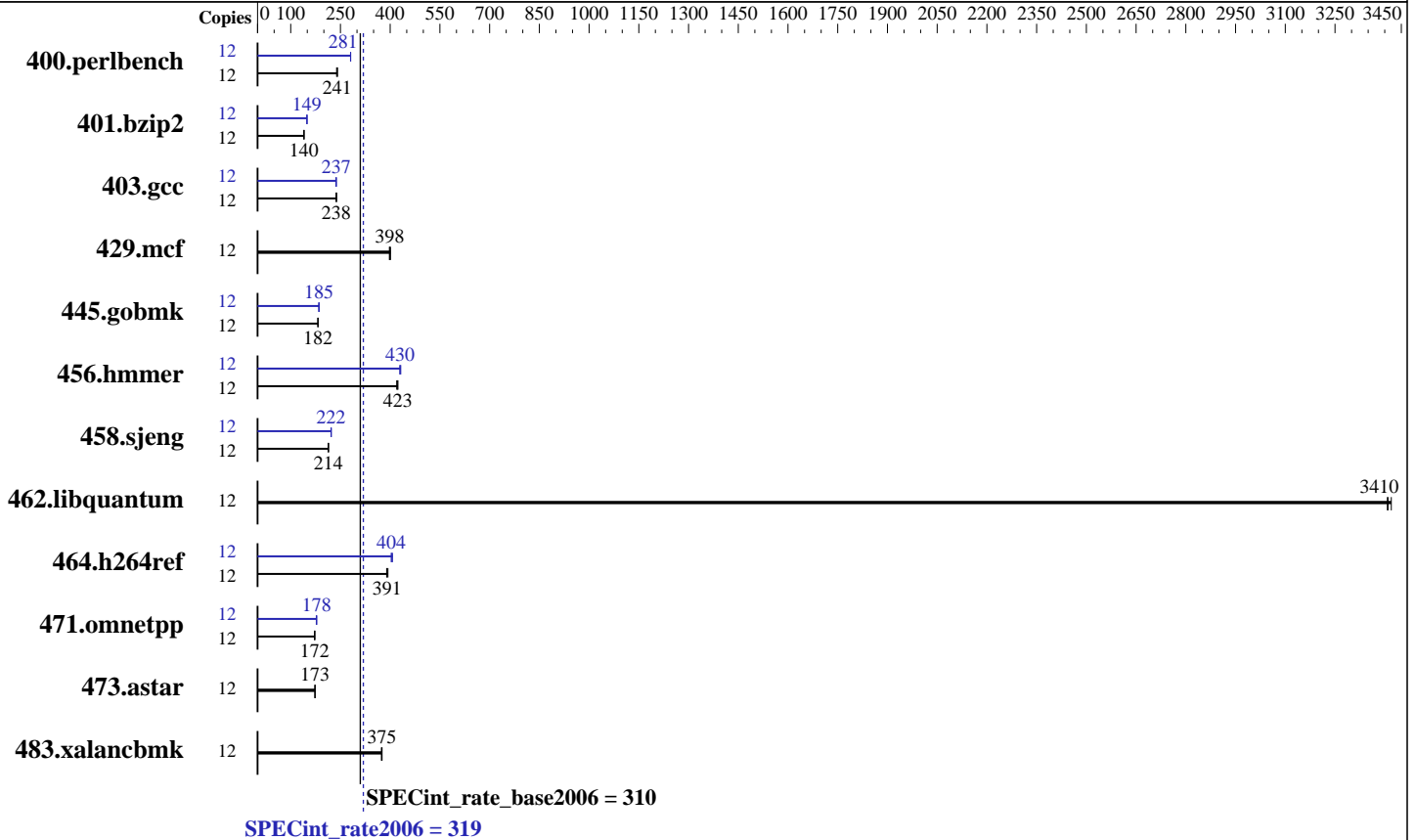
Test date: Mar-2015

Test sponsor: ACTION S.A.

Hardware Availability: Sep-2014

Tested by: ACTION S.A.

Software Availability: Sep-2014



### Hardware

CPU Name: Intel Xeon E5-2609 v3  
 CPU Characteristics:  
 CPU MHz: 1900  
 FPU: Integrated  
 CPU(s) enabled: 12 cores, 2 chips, 6 cores/chip  
 CPU(s) orderable: 1,2 chips  
 Primary Cache: 32 KB I + 32 KB D on chip per core  
 Secondary Cache: 256 KB I+D on chip per core  
 L3 Cache: 15 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 128 GB (16 x 8 GB 1Rx4 PC4-2133P-R, running at 1600 MHz)  
 Disk Subsystem: 1 x 240 GB SATA II SSD  
 Other Hardware: None

### Software

Operating System: Red Hat Enterprise Linux Server release 7.0 (Maipo)  
 3.10.0-123.20.1.el7.x86\_64  
 Compiler: C/C++: Version 15.0.0.090 of Intel C++ Studio XE for Linux  
 Auto Parallel: No  
 File System: ext4  
 System State: Run level 3 (multi-user)  
 Base Pointers: 32-bit  
 Peak Pointers: 32/64-bit  
 Other Software: Microquill SmartHeap V10.0



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## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	12	487	241	492	238	<b>487</b>	<b>241</b>	12	418	280	418	281	<b>418</b>	<b>281</b>
401.bzip2	12	<b>827</b>	<b>140</b>	828	140	826	140	12	<b>778</b>	<b>149</b>	777	149	778	149
403.gcc	12	408	237	405	238	<b>406</b>	<b>238</b>	12	<b>407</b>	<b>237</b>	409	236	406	238
429.mcf	12	<b>275</b>	<b>398</b>	273	401	275	398	12	<b>275</b>	<b>398</b>	273	401	275	398
445.gobmk	12	690	182	<b>691</b>	<b>182</b>	691	182	12	679	185	<b>680</b>	<b>185</b>	680	185
456.hammer	12	<b>265</b>	<b>423</b>	267	420	265	423	12	261	429	<b>260</b>	<b>430</b>	259	432
458.sjeng	12	<b>679</b>	<b>214</b>	679	214	681	213	12	<b>654</b>	<b>222</b>	655	222	653	222
462.libquantum	12	72.7	3420	<b>72.9</b>	<b>3410</b>	73.0	3410	12	72.7	3420	<b>72.9</b>	<b>3410</b>	73.0	3410
464.h264ref	12	675	393	682	389	<b>679</b>	<b>391</b>	12	658	403	652	407	<b>658</b>	<b>404</b>
471.omnetpp	12	434	173	437	172	<b>435</b>	<b>172</b>	12	<b>421</b>	<b>178</b>	420	178	423	177
473.astar	12	486	173	486	173	<b>486</b>	<b>173</b>	12	486	173	486	173	<b>486</b>	<b>173</b>
483.xalancbmk	12	<b>221</b>	<b>375</b>	221	375	222	374	12	<b>221</b>	<b>375</b>	221	375	222	374

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

## Submit Notes

The numactl mechanism was used to bind copies to processors. The config file option 'submit' was used to generate numactl commands to bind each copy to a specific processor. For details, please see the config file.

## Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

## Platform Notes

Bios Settings  
Power Technology = Energy Efficient

BMC Setting  
Fan Mode = Full Speed

Sysinfo program /cpu2006.1.2/config/sysinfo.rev6818  
\$Rev: 6818 \$ \$Date:: 2012-07-17 #\$ e86d102572650a6e4d596a3cee98f191  
running on localhost.localdomain Wed Mar 4 09:39:32 2015

This section contains SUT (System Under Test) info as seen by some common utilities. To remove or add to this section, see:  
<http://www.spec.org/cpu2006/Docs/config.html#sysinfo>

From /proc/cpuinfo  
model name : Intel(R) Xeon(R) CPU E5-2609 v3 @ 1.90GHz  
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### Platform Notes (Continued)

2 "physical id"s (chips)  
12 "processors"  
cores, siblings (Caution: counting these is hw and system dependent. The following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)

```
cpu cores : 6
siblings  : 6
physical 0: cores 0 1 2 3 4 5
physical 1: cores 0 1 2 3 4 5
cache size : 15360 KB
```

From /proc/meminfo

```
MemTotal:      131761400 kB
HugePages_Total: 0
Hugepagesize:  2048 kB
```

/usr/bin/lsc\_release -d

Red Hat Enterprise Linux Server release 7.0 (Maipo)

From /etc/\*release\* /etc/\*version\*

```
os-release:
NAME="Red Hat Enterprise Linux Server"
VERSION="7.0 (Maipo)"
ID="rhel"
ID_LIKE="fedora"
VERSION_ID="7.0"
PRETTY_NAME="Red Hat Enterprise Linux"
ANSI_COLOR="0;31"
CPE_NAME="cpe:/o:redhat:enterprise_linux:7.0:GA:server"
redhat-release: Red Hat Enterprise Linux Server release 7.0 (Maipo)
system-release: Red Hat Enterprise Linux Server release 7.0 (Maipo)
system-release-cpe: cpe:/o:redhat:enterprise_linux:7.0:ga:server
```

uname -a:

```
Linux localhost.localdomain 3.10.0-123.20.1.el7.x86_64 #3 SMP Wed Feb 4
14:55:18 CET 2015 x86_64 x86_64 x86_64 GNU/Linux
```

run-level 3 Mar 4 07:24

SPEC is set to: /cpu2006.1.2

```
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sdal        ext4  212G  26G  176G  13% /
```

Additional information from dmidecode:

BIOS American Megatrends Inc. 1.0a 11/05/2014

Memory:

```
16x 8 GB
1x Micron(data:14/25) 18ASF1G72PZ-2G1A2 8 GB 1600 MHz 1 rank
2x Micron(data:14/30) 18ASF1G72PZ-2G1A2 8 GB 1600 MHz 1 rank
10x Micron(data:14/32) 18ASF1G72PZ-2G1A2 8 GB 1600 MHz 1 rank
1x Micron(data:14/34) 18ASF1G72PZ-2G1A2 8 GB 1600 MHz 1 rank
2x Micron(data:14/35) 18ASF1G72PZ-2G1A2 8 GB 1600 MHz 1 rank
```

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## Platform Notes (Continued)

(End of data from sysinfo program)  
dmidecode does not properly detect memory modules  
16 modules of 8 GB were used to run the test (128 GB total)

## General Notes

Environment variables set by runspec before the start of the run:  
LD\_LIBRARY\_PATH = "/cpu2006.1.2/libs/32:/cpu2006.1.2/libs/64:/cpu2006.1.2/sh"

Transparent Huge Pages enabled with:  
echo always > /sys/kernel/mm/redhat\_transparent\_hugepage/enabled  
Filesystem page cache cleared with:  
echo 1> /proc/sys/vm/drop\_caches  
runspec command invoked through numactl i.e.:  
numactl --interleave=all runspec <etc>  
Binaries compiled on a system with 2x Xeon E5-2650 v3 chips + 256 GB memory  
using RedHat EL 7.0

## Base Compiler Invocation

C benchmarks:  
icc -m32 -L/opt/intel/composer\_xe\_2015/lib/ia32  
C++ benchmarks:  
icpc -m32 -L/opt/intel/composer\_xe\_2015/lib/ia32

## Base Portability Flags

400.perlbench: -DSPEC\_CPU\_LINUX\_IA32  
462.libquantum: -DSPEC\_CPU\_LINUX  
483.xalancbmk: -DSPEC\_CPU\_LINUX

## Base Optimization Flags

C benchmarks:  
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch  
-opt-mem-layout-trans=3  
C++ benchmarks:  
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch  
-opt-mem-layout-trans=3 -Wl,-z,muldefs -L/cpu2006.1.2/sh -lsmartheap



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## Base Other Flags

C benchmarks:

403.gcc: -Dalloca=\_alloca

## Peak Compiler Invocation

C benchmarks (except as noted below):

icc -m32 -L/opt/intel/composer\_xe\_2015/lib/ia32

400.perlbench: icc -m64

401.bzip2: icc -m64

456.hmmer: icc -m64

458.sjeng: icc -m64

C++ benchmarks:

icpc -m32 -L/opt/intel/composer\_xe\_2015/lib/ia32

## Peak Portability Flags

400.perlbench: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX\_X64

401.bzip2: -DSPEC\_CPU\_LP64

456.hmmer: -DSPEC\_CPU\_LP64

458.sjeng: -DSPEC\_CPU\_LP64

462.libquantum: -DSPEC\_CPU\_LINUX

483.xalancbmk: -DSPEC\_CPU\_LINUX

## Peak Optimization Flags

C benchmarks:

400.perlbench: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)  
-auto-ilp32

401.bzip2: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)  
-opt-prefetch -auto-ilp32 -ansi-alias

403.gcc: -xCORE-AVX2 -ipo -O3 -no-prec-div

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## Peak Optimization Flags (Continued)

429.mcf: basepeak = yes

445.gobmk: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)  
-ansi-alias -opt-mem-layout-trans=3

456.hmmer: -xCORE-AVX2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32

458.sjeng: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)  
-unroll4 -auto-ilp32

462.libquantum: basepeak = yes

464.h264ref: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)  
-unroll2 -ansi-alias

C++ benchmarks:

471.omnetpp: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)  
-ansi-alias -opt-ra-region-strategy=block -Wl,-z,muldefs  
-L/cpu2006.1.2/sh -lsmartheap

473.astar: basepeak = yes

483.xalancbmk: basepeak = yes

## Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=\_alloca

The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.html>

<http://www.spec.org/cpu2006/flags/ACTION.SA-Platform-Flags-RevC-jan-2015-For-Supermicro-Platform.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.xml>

<http://www.spec.org/cpu2006/flags/ACTION.SA-Platform-Flags-RevC-jan-2015-For-Supermicro-Platform.xml>



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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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